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METHOD AND APPARATUS FOR INCREASING PERSONABILITY OF INSTANT MESSAGING WITH USER IMAGES

BACKGROUND OF THE INVENTION

1.   Technical Field:

The present invention relates generally to an improved data processing system and in particular to a method and apparatus for processing and displaying messages in an instant messaging system. Still more particularly, the present invention provides an improved method, apparatus, and computer instructions for improving personability of instant messages with user images.

2.   Description of Related Art:

Instant messaging is an online chat medium, allowing users to communicate with each other and collaborate in real time over a network data processing system. Instant messaging is commonly used over the Internet. Instant messaging applications monitor and report the status of users that have established each other as online contacts. Additionally, instant messager users may find additional contacts through various mechanisms. For example, a user may find other users based on a search for users with similar interests, such as school, investing, cars, and movies. The status in messages are typically presented to the user in a window on the user's data processing system. Instant messaging applications also are often employed by users conducting business. By

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utilizing instant messaging, business users can view each other's availability and initiate a text conversation with colleagues or customers when a desired contact becomes available. Millions of users communicate using instant messaging systems every day. With instant messaging becoming an important part of both personal and business communications, functionality, and usability enhancement are important to the continued success of this type of communication tool.

One problem with instant messaging is that it is often impersonal. Particularly when working with someone that a user has never met, it is easy for the user to forget that person's name. Identifying the importance of a particular message may be difficult when a user has hundreds of contacts and may receive numerous messages during the day. As a result, if a message comes from that particular person, the importance of the message may be unknown to the user. As a result, instant messaging is a rough substitute for the experience of meeting someone in person or face-to-face. Therefore, it would be advantageous to have an improved method, apparatus, and computer instructions for improving the personability of instant messages.

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SUMMARY OF THE INVENTION

The present invention provides a method, apparatus, and computer instructions for handling instant messages. In response to receiving an instant message, a determination is made as to whether a picture of a sender of the instant message is associated with the instant message, wherein the picture is located in a preexisting database of pictures. The picture with the message is displayed on a display in the data processing system, if the picture is associated with the message.

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BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objectives and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

Figure 1 depicts a pictorial representation of a network of data processing systems in which the present invention may be implemented;

Figure 2 is a block diagram of a data processing system that may be implemented as a server in accordance with a preferred embodiment of the present invention;

Figure 3 is a block diagram illustrating a data processing system in which the present invention may be implemented;

Figure 4 is a block diagram illustrating components used in improving personability of instant messages with user images in accordance with a preferred embodiment of the present invention;

Figure 5 is a diagram illustrating an instant messaging client in accordance with a preferred embodiment of the present invention;

Figure 6 is a diagram illustrating an example of a messaging window in accordance with a preferred embodiment of the present invention;

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Figure 7 is a flowchart of a process for generating an instant message in accordance with a preferred embodiment of the present invention;

Figure 8 is a flowchart of a process for receiving a message in accordance with a preferred embodiment of the present invention;

Figure 9 is a flowchart of a process for handling a message at an instant messaging server process in accordance with a preferred embodiment of the present invention; and

Figure 10 is a flowchart of a process for selecting images for a message in accordance with a preferred embodiment of the present invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the figures, **Figure 1** depicts a pictorial representation of a network of data processing systems in which the present invention may be implemented. Network data processing system **100** is a network of computers in which the present invention may be implemented. Network data processing system **100** contains a network **102**, which is the medium used to provide communications links between various devices and computers connected together within network data processing system **100**. Network **102** may include connections, such as wire, wireless communication links, or fiber optic cables.

In the depicted example, server **104** is connected to network **102** along with storage unit **106**. In addition, clients **108**, **110**, and **112** are connected to network **102**. These clients **108**, **110**, and **112** may be, for example, personal computers or network computers. In the depicted example, server **104** provides data, such as boot files, operating system images, and applications to clients **108**-**112**. Clients **108**, **110**, and **112** are clients to server **104**. Server **104** may act as an instant messaging server to facilitate the exchange of messages between users at clients, such as clients **108**, **110**, and **112**. Network data processing system **100** may include additional servers, clients, and other devices not shown.

In the depicted example, network data processing system **100** is the Internet with network **102** representing a worldwide collection of networks and gateways that use the Transmission Control Protocol/Internet Protocol (TCP/IP)

suite of protocols to communicate with one another. At
the heart of the Internet is a backbone of high-speed data
communication lines between major nodes or host computers,
consisting of thousands of commercial, government,
educational and other computer systems that route data and
messages. Of course, network data processing system **100**
also may be implemented as a number of different types of
networks, such as for example, an intranet, a local area
network (LAN), or a wide area network (WAN). **Figure 1** is
intended as an example, and not as an architectural
limitation for the present invention.

Referring to **Figure 2**, a block diagram of a data
processing system that may be implemented as a server,
such as server **104** in **Figure 1**, is depicted in accordance
with a preferred embodiment of the present invention.
Data processing system **200** may be a symmetric
multiprocessor (SMP) system including a plurality of
processors **202** and **204** connected to system bus **206**.
Alternatively, a single processor system may be employed.
Also connected to system bus **206** is memory
controller/cache **208**, which provides an interface to local
memory **209**. I/O bus bridge **210** is connected to system bus
206 and provides an interface to I/O bus **212**. Memory
controller/cache **208** and I/O bus bridge **210** may be
integrated as depicted.

Peripheral component interconnect (PCI) bus bridge
214 connected to I/O bus **212** provides an interface to PCI
local bus **216**. A number of modems may be connected to PCI
local bus **216**. Typical PCI bus implementations will
support four PCI expansion slots or add-in connectors.

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Communications links to clients **108-112** in **Figure 1** may be provided through modem **218** and network adapter **220** connected to PCI local bus **216** through add-in boards.

Additional PCI bus bridges **222** and **224** provide interfaces for additional PCI local buses **226** and **228**, from which additional modems or network adapters may be supported. In this manner, data processing system **200** allows connections to multiple network computers. A memory-mapped graphics adapter **230** and hard disk **232** may also be connected to I/O bus **212** as depicted, either directly or indirectly.

Those of ordinary skill in the art will appreciate that the hardware depicted in **Figure 2** may vary. For example, other peripheral devices, such as optical disk drives and the like, also may be used in addition to or in place of the hardware depicted. The depicted example is not meant to imply architectural limitations with respect to the present invention.

The data processing system depicted in **Figure 2** may be, for example, an IBM eServer pSeries system, a product of International Business Machines Corporation in Armonk, New York, running the Advanced Interactive Executive (AIX) operating system or LINUX operating system.

With reference now to **Figure 3**, a block diagram illustrating a data processing system is depicted in which the present invention may be implemented. Data processing system **300** is an example of a client computer. Data processing system **300** employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus

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architectures such as Accelerated Graphics Port (AGP) and
Industry Standard Architecture (ISA) may be used.
Processor **302** and main memory **304** are connected to PCI
local bus **306** through PCI bridge **308**. PCI bridge **308** also
may include an integrated memory controller and cache
memory for processor **302**. Additional connections to PCI
local bus **306** may be made through direct component
interconnection or through add-in boards. In the depicted
example, local area network (LAN) adapter **310**, SCSI host
bus adapter **312**, and expansion bus interface **314** are
connected to PCI local bus **306** by direct component
connection. In contrast, audio adapter **316**, graphics
adapter **318**, and audio/video adapter **319** are connected to
PCI local bus **306** by add-in boards inserted into expansion
slots. Expansion bus interface **314** provides a connection
for a keyboard and mouse adapter **320**, modem **322**, and
additional memory **324**. Small computer system interface
(SCSI) host bus adapter **312** provides a connection for hard
disk drive **326**, tape drive **328**, and CD-ROM drive **330**.
Typical PCI local bus implementations will support three
or four PCI expansion slots or add-in connectors.

An operating system runs on processor **302** and is used
to coordinate and provide control of various components
within data processing system **300** in **Figure 3**. The
operating system may be a commercially available operating
system, such as Windows XP, which is available from
Microsoft Corporation. An object oriented programming
system such as Java may run in conjunction with the
operating system and provide calls to the operating system
from Java programs or applications executing on data

processing system **300**. "Java" is a trademark of Sun
Microsystems, Inc. Instructions for the operating system,
the object-oriented programming system, and applications
or programs are located on storage devices, such as hard
disk drive **326**, and may be loaded into main memory **304** for
execution by processor **302.**

Those of ordinary skill in the art will appreciate
that the hardware in **Figure 3** may vary depending on the
implementation. Other internal hardware or peripheral
devices, such as flash read-only memory (ROM), equivalent
nonvolatile memory, or optical disk drives and the like,
may be used in addition to or in place of the hardware
depicted in **Figure 3**. Also, the processes of the present
invention may be applied to a multiprocessor data
processing system.

The depicted example in **Figure 3** and above-described
examples are not meant to imply architectural
limitations. For example, data processing system **300**
also may be a notebook computer or hand held computer in
addition to taking the form of a PDA. Data processing
system **300** also may be a kiosk or a Web appliance.

The present invention provides a method, apparatus,
and computer instructions for improving personability of
instant messaging through the use of user images or
pictures. The mechanism of the present invention
attaches a picture of the user that is sent with an
instant message to another user. Depending on the
implementation, the picture may be sent only with the
initial message. Additional pictures are sent if the
user chooses to change the picture. These pictures may

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be those of the user and may change from time to time depending on what the user selects. When a message is received by a user, the picture is displayed along with the message by the instant messaging application. In this manner, the user may identify the sender of the message using the picture and associates some level of importance with the message without having to actually read the message.

Turning now to **Figure 4**, a block diagram illustrating components used in improving personability of instant messages with user images in accordance with a preferred embodiment of the present invention. In this illustrative example, a user at instant messaging client **400** may send or exchange messages with another user at instant messaging client **402**. These instant messaging clients may be executing on a data processing system, such as data processing system **300** in **Figure 3**. The exchange of messages in these examples is facilitated through instant messaging server process **404**. This process allows for users to find other users within the instant messaging system as well as aid in the exchange of messages between different users.

Depending on the particular instant messaging system, instant messaging server process **404** may only be involved in providing an indication of when particular users are online and for establishing initial contacts while users contacting users already on a buddy list may contact those users directly after seeing that a particular user is online. Instant messaging server

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process **404** may be located on a server, such as data processing system **200** in **Figur 2.**

In these examples, the different users registered to the instant messaging system are stored in user database **406**. This user database provides information needed to search for and find other users as well as contact users when they are online. Additionally, image database **408** also is present within this system. This image database in these examples contains pictures or "mug shots" of users. In these examples, the images are typically small in size to avoid using too much bandwidth. For example, a 1kb image may be used in these illustrative examples.

When a message is sent from one user to another user, instant messaging server process **404** may attach a picture to the message so that the picture is displayed in the instant messaging window provided by an instant messaging client.

In these illustrative examples, the image is sent only when the first message is sent from one user to another user during a particular session. The image may be resent at a later time if another session is established.

A user at instant messaging client **400** may take one or more pictures, which are stored in image file **410**. These images may be sent to instant messaging server process **404** for storage in image database **408**. Images in image database **408** are stored in association with user or screen names, with these names acting as an index to identify images for a particular user. Further, images received of another user may be stored in image file **410**.

In a similar fashion, image file **412** also contains images
for the user at instant messaging client **402** as well as
for storing messages received from another user. These
image files act as a cache for the pictures. Of course,
other types of data structures other than files may be
used to cache images depending on the particular
implementation.

Further, images from image database **408** may be
stored within image file **410** or image file **412** to provide
for local caching of the pictures. As a result, when a
message is received from a particular user, the user
identification or name may be used to match up a picture
in image file **410** or image file **412** for display, without
requiring transmission of the image each time a session
is initiated. Image database **408** may be an existing
database of images, such as a database of images used for
badges within a company or business. In this manner, an
existing set of images may be used with the mechanism of
the present invention, without requiring an entire set of
images to be generated for each user.

In this illustrative example, the images in the
illustrative embodiment in image database **408** were
originally created for a different purpose. In this
case, this database of pictures was originally created as
a corporate or business database for use in generating
badges. Other types of databases containing pictures of
users also may be used with the mechanism of the present
invention. These images still may be used for the
purpose of generating badges in these examples.

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In another example, BluePages is an IBM database of phone numbers e-mail addresses, and names. A persona database with images is linked to BluePages. This database is currently accessed through the Internet using a browser to provide employees information about other employees. Such a database may be used as image database **408**. In this manner, an existing database of pictures created for a different purpose may be used in the messaging system of the present invention. If an existing database is not available, image database **408** may take the form of a new database created specifically for use with the mechanism of the present invention.

Further, multiple images may be generated in which different images may be sent to database **408** or transmitted to another user depending on the selection made by the user. One picture may be, for example, a happy picture, another may be a serious picture, while another picture may be a perplexed picture. With these types of pictures, based on "smileys" found in the text, different images may be transferred to the recipient. Smileys are also referred to as "emoticons". These are expressions of an emotion typed into a message using standard keyboard characters. Illustrative examples may be viewed sideways as follows: :-) representing a smile,:-(representing a frown, and ;-) representing a wink. Thus, depending on the particular picture associated with a smiley or emoticon, a selected picture may be sent to the recipient of a message in the instant messaging system.

Turning next to **Figure 5**, a diagram illustrating an instant messaging client is depicted in accordance with a preferred embodiment of the present invention. The components illustrated in **Figure 5** may be found in an instant messaging client, such as instant messaging client **400** or **402** in **Figure 4**. These components may be implemented in a data processing system, such as data processing system **300** in **Figure 3**.

In the illustrative example, instant messaging application **500** processes messages, such as message **502**, received from users located on remote data processing systems. As messages are received, these messages are presented in dialog windows **504**. Additionally, dialog windows **504** provide an interface for a user to input text to send messages to other users.

Contact and control window **506** is presented by instant messaging application **500** to provide the user with a list of user names, as well as other information. Additionally, a small picture or thumbnail of each person on the contact list may be displayed in association with the persons on the list. This other information may include, for example, identifying other users that are currently online. Contact and control window **506** also provides an interface to allow a user to set different preferences. For example, the user may set passwords required to access different names used in instant messaging sessions.

Also, a user may employ contact and control window **506** to set other preferences, such as colors and fonts used in instant messaging application **500**. These

preferences also may include whether a picture is to be sent when a session is initiated with another user. Depending on the implementation, the preference may be set to allow a user who receives messages to retrieve images of the senders from a remote database or a local cache.

Further, a list of names presented by contact and control window **506** are stored in contact list **508** in these examples. Additional user or screen names may be added to or deleted from contact list **508**. This contact list is employed in presenting the list of names within contact and control window **506**. Further, image file **510** is accessed by instant messaging application **500** in sending or receiving pictures that are displayed in association with messages in these examples.

A user may select a graphical control to set a preference to send and display pictures when instant messaging sessions occur. These pictures are used to provide the user with additional personability when instant messages are exchanged.

With reference now to **Figure 6**, a diagram illustrating an example of a messaging window is depicted in accordance with a preferred embodiment of the present invention. In these examples, messaging window **600** is an example of a messaging window within dialog windows **504** in **Figure 5**. Messaging window **600** is displayed when a message is received from another user.

In this example, messaging window **600** includes chat history section **602** and message input section **604**. Chat history section **602** is used to display messages exchanged

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with a remote user. Message input section **604** allows a user to input text for sending a message to a remote user.

Picture **606** is a display of a picture of a person for a current chat session. With the use of picture **606**, the user may identify or relate some amount of importance with the message received from that remote person, without having to read the message. This type of personability feature is especially useful in providing additional information for users that remember faces better than names. Further, a user may be across the room or far enough away from the display when a message arrives such that the user is unable to read the message. With the image from the sender, the user may be able to decide the importance of the message without actually having to read the message.

Window **600** is presented for purposes of illustration and not meant as a limitation as to how pictures or images may be displayed in association with messages. For example, picture **606** may be displayed in a separate window from window **600** depending on the particular implementation.

Turning next to **Figure 7**, a flowchart of a process for generating an instant message is depicted in accordance with a preferred embodiment of the present invention. The process illustrated in **Figure 7** may be implemented in an instant messaging application, such as instant messaging application **500** in **Figure 5**. This particular process is typically used when a message is first sent to a person from the user.

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The process begins by receiving user input for the message (step **700**). Next, a determination is made as to whether the message is complete (step **702**). If the message is not complete, the process returns to step **700**. Otherwise, a determination is made as to whether an image is to be sent (step **704**). This determination may be made by checking a preference selected by the user or by determining whether an image or picture is present for the user. If an image is to be sent, the image is attached to the message (step **706**), and the message is then sent to the recipient (step **708**) with the process terminating thereafter. Turning back to step **704**, if an image is not to be sent, the process proceeds directly to step **708** without attaching an image, with the process terminating thereafter.

Depending on the particular implementation, the image may actually be attached by the server process rather than at the client side application. In this case, the message then includes an indication that an image is to be attached to the message sent to the recipient.

Turning now to **Figure 8**, a flowchart of a process for receiving a message is depicted in accordance with a preferred embodiment of the present invention. The process illustrated in **Figure 8** may be implemented in an instant message application, such as instant messaging application **500** in **Figure 5**.

The process begins by receiving a message (step **800**). A determination is made as to whether an image is attached to the message (step **802**). If an image is

attached, the image is displayed along with the message in a window (step **804**). This window is similar to window **600** in **Figure 6**.

With reference again to step **802**, if an image is not displayed, a determination is made as to whether the image for the sender of the message is located in a local cache (step **806**). The local cache may be, for example, image file **410** in **Figure 4**. If the image is located in a local cache, the process proceeds to step **804** as described above. Local caching of images may save on bandwidth usage. Otherwise, the message is displayed in the window without a picture (step **808**) with the process terminating thereafter.

Turning next to **Figure 9**, a flowchart of a process for handling a message at an instant messaging server process is depicted in accordance with a preferred embodiment of the present invention. The process illustrated in **Figure 9** may be implemented in an instant messaging server process, such as instant messaging server process **404** in **Figure 4**.

The process begins by receiving a request for a contact (step **900**). This request may be to initiate a session with a person listed as a contact for an instant messaging client. A determination is made as to whether an image of the sender is present in an image database (step **902**). This image database may be, for example, image database **408** in **Figure 4**. If an image of the sender is present, the image is attached to the message (step **904**).

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Thereafter, the message is sent to the recipient (step **906**) with the process terminating thereafter. With reference again to step **902**, if an image is not present, the process proceeds to step **906** to send the message to the recipient without attaching an image. The process then terminates.

With reference now to **Figure 10**, a flowchart of a process for selecting images for a message is depicted in accordance with a preferred embodiment of the present invention. The process illustrated in **Figure 10** may be implemented in an instant messaging application, such as instant messaging application **500** in **Figure 5**. This process may be implemented to select an image from a group of images to be sent with a messaging program. In these examples, the image is selected based on a smiley or emoticon that may be present in the text.

The process begins by determining whether a smiley is present in the text (step **1000**). If a smiley is present, a picture is selected based on the smiley (step **1002**) with the process terminating thereafter. If a smiley is not present in step **1000**, the process selects a default picture (step **1004**) with the process terminating thereafter. In this manner, the message displayed in the window may change depending on the particular smiley or emoticon used by a user. Additionally, the particular picture selected also may be changed based on other types of indicators other than smileys depending on the particular implementation.

Thus, the present invention provides an improved method, apparatus, and computer instructions for

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improving personability of instant messages through the use of user images. In these examples, pictures are displayed with instant messages so that a user receiving an instant message from another person can have a visual identification of that person in addition to merely a name on a contact list. In this manner, an advantage is provided for people who remember faces better than names. Further, the importance of a message also may be identified without reading the message when a picture is presented with the message. These pictures may be obtained in different ways, such as, for example, from the sender with the message, from a locale cache, or from a database on a remote server.

Additionally, other features may be implemented with this particular instant messaging system. For example, other features, such as blocking pictures, may be employed. With this feature, a user may block the transfer of the user's image to another recipient.

It is important to note that while the present invention has been described in the context of a fully functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in the form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media, such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs, and

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transmission-type media, such as digital and analog communications links, wired or wireless communications links using transmission forms, such as, for example, radio frequency and light wave transmissions. The computer readable media may take the form of coded formats that are decoded for actual use in a particular data processing system.

The description of the present invention has been presented for purposes of illustration and description, and is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. The embodiment was chosen and described in order to best explain the principles of the invention, the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.